

## Claims

What is claimed is:

- [c1] A method for resolving updates in a directory server, comprising:  
generating a change sequence number;  
creating a total ordering of operations by time using the change sequence number;  
extracting state information from an entry associated with an operation from the  
total ordering; and  
computing a new state for the entry using extracted state information and the  
operation associated with the entry.
- [c2] The method of claim 1, wherein total ordering is enforced by a value resolution  
routine.
- [c3] The method of claim 1, wherein state information is recorded for an attribute of  
the entry.
- [c4] The method of claim 3, wherein state information is recorded for a value of the  
attribute.
- [c5] The method of claim 1, further comprising:  
storing state information in the directory server.
- [c6] The method of claim 1, further comprising:  
promulgating copies of data by update resolution procedure to a consumer server.
- [c7] The method of claim 1, further comprising:  
promulgating copies of data by update resolution procedure to a supplier server.

- [c8] A directory server comprising:  
a supplier server;  
a consumer server in communication with the supplier server;  
a plurality of pluggable services that manage replication of data contained within  
the directory server from the supplier server to the consumer server; and  
an update resolution procedure used to detect and resolve update conflicts between  
consumer servers;  
wherein replication of data is managed using the update resolution procedure.
- [c9] The directory server of claim 9, wherein the update resolution procedure uses an  
update resolution policy to detect and resolve update conflicts between consumer  
servers.
- [c10] The directory server of claim 9, wherein the update resolution procedure  
promulgates copies of data to the consumer server.
- [c11] The directory server of claim 9, wherein the update resolution procedure  
promulgates copies of data to the supplier server.
- [c12] An apparatus for resolving updates in a directory server, comprising:  
means for generating a change sequence number;  
means for creating a total ordering of operations by time using the change  
sequence number;  
means for extracting state information from an entry associated with an operation  
from the total ordering; and  
means for computing a new state for the entry using extracted state information  
and the operation associated with the entry.